



POWERWARE® 9125

PowerPass® Distribution Module

User's Guide

For use with Two-in-One, 2500-3000 VA Models

www.powerware.com

Class A EMC Statements

FCC Part 15

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

ICES-003

This Class A Interference Causing Equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

EN50091-2

Some configurations are classified under EN50091-2 as “Class-A UPS for Unrestricted Sales Distribution.” For these configurations, the following applies:

WARNING This is a Class A-UPS Product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take additional measures.

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CHAPTER 1

INTRODUCTION

The PowerPass® Distribution Module (PDM) is designed to operate with a 2500-3000 VA Powerware® 9125 uninterruptible power system (UPS) and allows you to:

- Replace or upgrade the UPS without losing power to your equipment (see “Using Maintenance Bypass” on page 31).
- Provide surge protection if the UPS is not present.
- Provide extra surge protection when the UPS is present.

Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS. This manual contains important instructions that you should follow during installation and maintenance of the PDM. Please read all instructions before operating the equipment and save this manual for future reference.

CAUTION



- There are **NO USER SERVICEABLE PARTS** inside the PDM. All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**.
- To reduce the risk of fire or electric shock, install this PDM in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% max).
- For PDM models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For PDM models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

Sikkerhedsanvisninger

VIGTIGE SIKKERHEDSANVISNINGER GEM DISSE ANVISNINGER DENNE BRUGERVEJLEDNING INDEHOLDER VIGTIGE SIKKERHEDSANVISNINGER



ADVARSEL

- Denne PDM indeholder LIVSFARLIG HØJSPÆNDING. Alle reparationer og vedligeholdelse bør kun udføres af en AUTORISERET SERVICETEKNIKER. Ingen af PDM'ens indvendige dele kan repareres af brugeren.
 - Installér denne PDM i et temperatur- og fugtighedskontrolleret indendørsmiljø, frit for ledende forureningsstoffer for at formindske risikoen for brand og elektrisk stød. Rumtemperaturen må ikke overstige 40°C. PDM'en bør ikke betjenes nær vand eller høj fugtighed (maksimalt 95%).
 - For PDM systemer med hårdledningsudgange, skal overstrømsbeskyttelse for vekslestrømmens udgangskredsløb forsynes af andre.
 - For PDM systemer med hårdledningsudgange, skal egnede, nominelle afbryderkontakter for vekslestrømmens udgangskredsløb forsynes af andre.
-

Belangrijke Veiligheidsinstructies

BELANGRIJKE VEILIGHEIDSINSTRUCTIES BEWAAR DEZE INSTRUCTIES DEZE HANDLEIDING BEVAT BELANGRIJKE VEILIGHEIDSINSTRUCTIES



OPGELET

- Deze PDM bevat LEVENSGEVAARLIJKE ELEKTRISCHE SPANNING. Alle reparaties en onderhoud dienen UITSLUITEND DOOR ERKEND SERVICEPERSONEEL te worden uitgevoerd. Er bevinden zich GEEN ONDERDELEN in de PDM die DOOR DE GEBRUIKER kunnen worden GEREpareerd.
- Teneinde de kans op brand of elektrische schok te verminderen dient deze PDM in een gebouw met temperatuur- en vochtigheidsregeling te worden geïnstalleerd, waar geen geleidende verontreinigingen aanwezig zijn. De omgevingstemperatuur mag 40°C niet overschrijden. Niet gebruiken in de buurt van water of bij zeer hoge vochtigheid (max. 95%).
- Voor PDM systemen met vast-bedrade uitgangen, moet de overstroombeveiliging voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.
- Voor PDM systemen met vast-bedrade uitgangen, moeten de juiste hoofdschakelaars voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.

Tarkeita Turvaohjeita

TÄRKEITÄ TURVAOHJEITA - SUOMI **SÄILYTÄ NÄMÄ OHJEET** **TÄMÄ OPAS SISÄLTÄÄ TÄRKEITÄ TURVAOHJEITA**



VARO

- Tämä PDM sisältää HENGENVAAARALLISIA JÄNNITTEITÄ. Kaikki korjaukset ja huollot on jätettävä VAIN VALTUUTETUN HUOLTOHENKILÖN TOIMEKSI. PDM ei sisällä MITÄÄN KÄYTTÄJÄN HUOLLETTAVIA OSIA.
- Vähentääksesi tulipalon ja sähköiskun vaaraa asenna tämä PDM sisätiloihin, joissa lämpötila ja kosteus on säädettävissä ja joissa ei ole virtaa johtavia epäpuhtauksia. Ympäristön lämpötila ei saa ylittää 40 °C. Älä käytä lähellä vettä ja vältä kosteita tiloja (95 % maksimi).
- PDM-järjestelmissä kiintealla asennuksella: kuormana olevien laitteiden ylivirtasuojaus ja erotuskytkimet tulee toteuttaa kuormapiireissa.

Consignes de sécurité

CONSIGNES DE SÉCURITÉ IMPORTANTES CONSERVER CES INSTRUCTIONS CE MANUEL CONTIENT DES CONSIGNES DE SÉCURITÉ IMPORTANTES



ATTENTION!

- Cet onduleur contient des TENSIONS MORTELLES. Toute opération d'entretien et de réparation doit être EXCLUSIVEMENT CONFIEE A UN PERSONNEL QUALIFIE AGRÉÉ. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.
- Pour réduire les risques d'incendie et de décharge électrique, installer l'onduleur uniquement à l'intérieur, dans un lieu dépourvu de matériaux conducteurs, où la température et l'humidité ambiantes sont contrôlées. La température ambiante ne doit pas dépasser 40 °C. Ne pas utiliser à proximité d'eau ou dans une atmosphère excessivement humide (95 % maximum).
- Pour les modèles PDM ayant des sorties câblées, la protection contre une surintensité pour le(s) circuit(s) de sortie de courant alternatif doit être fournie par un autre fournisseur.
- Pour les modèles PDM ayant des sorties câblées, les interrupteurs de déconnexion convenables pour le(s) circuit(s) de sortie de courant alternatif doivent être fournis par un autre fournisseur.

Sicherheitswarnungen

**WICHTIGE SICHERHEITSANWEISUNGEN AUFBEWAHREN.
DIESES HANDBUCH ENTHÄLT WICHTIGE
SICHERHEITSANWEISUNGEN.**



VORSICHT!

- Die USV führt lebensgefährliche Spannungen. Alle Reparatur- und Wartungsarbeiten sollten nur von Kundendienstfachleuten durchgeführt werden. Die USV enthält keine vom Benutzer zu wartenden Komponente.
 - Um die Brand- oder Elektroschockgefahr zu verringern, diese USV nur in Gebäuden mit kontrollierter Temperatur und Luftfeuchtigkeit installieren, in denen keine leitenden Schmutzstoffen vorhanden sind. Die Umgebungstemperatur darf 40°C nicht übersteigen. Die USV nicht in der Nähe von Wasser oder in extrem hoher Luftfeuchtigkeit (max. 95 %) betreiben.
 - Für PDM-Systeme mit festverdrahteten Eingängen muß der Überstromschutz für die Ausgangswechselstromkreise anderweitig bereitgestellt werden.
 - Für PDM-Systeme mit festverdrahteten Ausgängen müssen Trennschalter für die Ausgangswechselstromkreise mit passendem Nennwert anderweitig bereitgestellt werden.
-

Προειδοποιήσεις Ασφάλειας

ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΠΕΡΙΕΧΕΙ ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ



ΠΡΟΣΟΧΗ

- Αυτό το PDM περιέχει ΘΑΝΑΤΗΦΟΡΑ ΤΑΣΗ. Όλες οι επισκευές και οι συντηρήσεις πρέπει να γίνονται ΜΟΝΟ ΑΠΟ ΕΞΟΥΣΙΟΔΟΤΗΜΕΝΟ ΓΙΑ ΤΗ ΣΥΝΤΗΡΗΣΗ ΠΡΟΣΩΠΙΚΟ. Το PDM ΔΕΝ ΠΕΡΙΕΧΕΙ ΚΑΝΕΝΑ ΕΞΑΡΤΗΜΑ ΠΟΥ ΝΑ ΜΠΟΡΕΙ ΝΑ ΕΠΙΣΚΕΥΑΣΤΕΙ ΑΠΟ ΤΟ ΧΡΗΣΤΗ.
- Για να μειώσετε τον κίνδυνο πυρκαγιάς ή ηλεκτροπληξίας, εγκαταστήστε το συγκεκριμένο PDM σε εσωτερικό χώρο με ελεγχόμενη θερμοκρασία και υγρασία, ο οποίος να μην περιέχει αγωγίμα υλικά. Η θερμοκρασία περιβάλλοντος δεν πρέπει να ξεπερνάει τους 40° C. Μη χρησιμοποιείτε το PDM κοντά σε νερό ή υπερβολική υγρασία (μέγιστη τιμή: 95%).

Avvisi di sicurezza

IMPORTANTI ISTRUZIONI DI SICUREZZA CONSERVARE QUESTE ISTRUZIONI QUESTO MANUALE CONTIENE IMPORTANTI ISTRUZIONI DI SICUREZZA



ATTENZIONE

- la TENSIONE contenuta in questo gruppo statico di continuità è LETALE. Tutte le operazioni di riparazione e di manutenzione devono essere effettuate ESCLUSIVAMENTE DA PERSONALE TECNICO AUTORIZZATO. All'interno del gruppo statico di continuità NON vi sono PARTI RIPARABILI DALL'UTENTE.
- Per ridurre il rischio di incendio o di scossa elettrica, installare il gruppo statico di continuità in un ambiente interno a temperatura ed umidità controllata, privo di agenti contaminanti conduttivi. La temperatura ambiente non deve superare i 40°C. Non utilizzare l'unità in prossimità di acqua o in presenza di umidità eccessiva (95% max).
- Nei sistemi PDM provvisti di uscite cablate, i dispositivi di protezione da sovracorrente per il/i circuito/i a corrente alternata in uscita devono essere forniti da terzi.
- Nei sistemi PDM provvisti di uscite cablate, i sezionatori di corrente nominale adeguata per il/i circuito/i a corrente alternata in uscita devono essere forniti da terzi.

Viktig Sikkerhetsinformasjon



FORSIKTIG

- Denne PDM'en inneholder LIVSFARLIGE SPENNINGER. All reparasjon og service må kun utføres av AUTORISERT SERVICEPERSONALE. BRUKERE KAN IKKE UTFØRE SERVICE PÅ NOEN AV DELENE i PDM'en.
- For å redusere fare for brann eller elektriske støt, bør denne PDM'en installeres i et innendørs miljø med kontrollert temperatur og luftfuktighet som er fritt for ledende, forurensende stoffer. Romtemperaturen må ikke overskride 40°C. Den må ikke brukes i nærheten av vann eller ved meget høy luftfuktighet (95% maks.).
- For PDM systemer med fastkoplede uttak, må overstrømvern for vekselstrømmuttak(ene) stilles til rådighet av andre.
- For PDM systemer med fastkoplede uttak, må passende utkoplingsbrytere for vekselstrømmuttak(ene) stilles til rådighet av andre.

Regulamentos de Segurança

INSTRUÇÕES DE SEGURANÇA IMPORTANTES GUARDE ESTAS INSTRUÇÕES ESTE MANUAL CONTÉM INSTRUÇÕES DE SEGURANÇA IMPORTANTES



PERIGO

- A PDM contém VOLTAGEM MORTAL. Todos os reparos e assistência técnica devem ser executados **SOMENTE POR PESSOAL DA ASSISTÊNCIA TÉCNICA AUTORIZADO**. Não há nenhuma PEÇA QUE POSSA SER REPARADA PELO USUÁRIO dentro da PDM.
- Para reduzir o risco de incêndios ou choques elétricos, instale a PDM em ambiente interno com temperatura e umidade controladas e livres de contaminadores condutíveis. A temperatura ambiente não deve exceder 40°C. Não opere próximo a água ou em umidade excessiva (máx: 95%).
- Para sistemas PDM com saídas conectadas, a proteção de sobrecarga para circuitos de saída de corrente alternada deve ser fornecida por outros.
- Para sistemas PDM com saídas conectadas, interruptores de desconexão devidamente qualificados para circuitos de saída de corrente alternada devem ser fornecidos por outros.

Предупреждения по мерам безопасности

**ВАЖНЫЕ УКАЗАНИЯ ПО МЕРАМ БЕЗОПАСНОСТИ
СОХРАНИТЕ ЭТИ УКАЗАНИЯ
ДАННОЕ РУКОВОДСТВО СОДЕРЖИТ ВАЖНЫЕ
УКАЗАНИЯ ПО МЕРАМ БЕЗОПАСНОСТИ**

ОСТОРОЖНО



- В данном ИБП имеются СМЕРТЕЛЬНО ОПАСНЫЕ НАПРЯЖЕНИЯ. Все работы по ремонту и обслуживанию должны выполняться ТОЛЬКО УПОЛНОМОЧЕННЫМ ОБСЛУЖИВАЮЩИМ ПЕРСОНАЛОМ. Внутри ИБП нет узлов, ОБСЛУЖИВАЕМЫХ ПОЛЬЗОВАТЕЛЕМ.
 - Для снижения опасности пожара или поражения электрическим током устанавливайте ИБП в закрытом помещении с контролируемой температурой и влажностью, в котором отсутствуют проводящие загрязняющие вещества. Температура окружающего воздуха не должна превышать 40°C. Не эксплуатируйте устройство около воды или в местах с повышенной влажностью (макс. 95%).
-

Advertencias de Seguridad

INSTRUCCIONES DE SEGURIDAD IMPORTANTES GUARDE ESTAS INSTRUCCIONES ESTE MANUAL CONTIENE INSTRUCCIONES DE SEGURIDAD IMPORTANTES



PRECAUCIÓN

- Este SIE contiene VOLTAJES MORTALES. Todas las reparaciones y el servicio técnico deben ser efectuados SOLAMENTE POR PERSONAL DE SERVICIO TÉCNICO AUTORIZADO. No hay NINGUNA PARTE QUE EL USUARIO PUEDA REPARAR dentro del SIE.
- Para reducir el riesgo de incendio o de choque eléctrico, instale este SIE en un lugar cubierto, con temperatura y humedad controladas, libre de contaminantes conductores. La temperatura ambiente no debe exceder los 40°C. No trabaje cerca del agua o con humedad excesiva (95% máximo).
- Para los sistemas PDM con salidas cableadas permanentemente, la protección contra exceso de corriente para el/los circuito(s) de CA de salida será suministrada por terceros.
- Para los sistemas PDM con salidas cableadas permanentemente, los interruptores de desconexión debidamente clasificados para el/los circuito(s) de CA de salida serán suministrados por terceros.

Säkerhetsföreskrifter

VIKTIGA SÄKERHETSFÖRESKRIFTER SPARA DESSA FÖRESKRIFTER DENNA BRUKSANVISNING INNEHÅLLER VIKTIGA SÄKERHETSFÖRESKRIFTER



VIKTIGT

- Denna PDM-enhet innehåller LIVSFARLIG SPÄNNING. ENDAST AUKTORISERAD SERVICEPERSONAL får utföra reparationer eller service. Det finns inga delar som ANVÄNDAREN KAN UTFÖRA SERVICE PÅ inuti PDM-enheten.
 - Minska risken för brand eller elektriska stötar genom att installera denna PDM-enhet inomhus, där temperatur och luftfuktighet är kontrollerade och där inga ledande föroreningar förekommer. Omgivande temperatur får ej överstiga 40°C. Använd inte utrustningen nära vatten eller vid hög luftfuktighet (max 95 %).
 - Överströmsskydd för de utgående växelströmskretsarna ska tillhandahållas av andra för PDM-system med fasta utgångar.
 - Bortkopplingsswitchar med passande dimensionering för de utgående växelströmskretsarna ska tillhandahållas av andra för PDM-system med fasta utgångar.
-



CHAPTER 2

INSTALLATION

This section explains:

- Equipment inspection
- Rack-mount and tower setup
- Low-voltage and high-voltage installation
- PowerPass Distribution Module rear panels
- Load segments

Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.


To file a claim for shipping damage or concealed damage: 1) File with the carrier within 15 days of receipt of the equipment; 2) Send a copy of the damage claim within 15 days to your service representative.

PDM Setup



NOTE If you are installing the UPS for the first time, follow the instructions in the UPS user's guide to set up the UPS and any optional Extended Battery Modules (EBMs). Do not connect your equipment to the UPS or start up the UPS before installing the PDM.

If the UPS is already installed and operating, prepare your equipment for shutdown and use the following procedure to shut down the UPS:

1. Turn off the equipment that is connected to the UPS.
2. Press and hold the Off  button for approximately three seconds. The UPS switches to Standby mode and removes power from the UPS output receptacles.

3. Unplug the UPS from the power outlet; the UPS shuts down in five seconds. All front panel indicators flash briefly prior to shutdown.
On 208V or 230V UPS models, disconnect the power cord from the UPS input connector.
4. Disconnect the power cord(s) between the protected equipment and the UPS.
5. If you are installing the PDM in a rack, continue to the following section “Rack-Mount Setup;” otherwise, continue to “Tower Setup” on page 15.

Rack-Mount Setup

The PDM can be installed in 19-inch racks and needs only 2U of valuable rack space.



CAUTION

The PDM1 models are heavy (see page 33). A minimum of two people are required to lift the PDM1 model into the rack.



NOTE Mounting rails are required for each UPS and PDM cabinet. If rails are not already installed in your rack, contact your local distributor to order a rail kit.

Use the following procedure to install the PDM in a rack:

1. Place the PDM on a flat, stable surface with the front of the PDM facing toward you.
2. Attach the mounting handles to the bracket with the screws provided in the accessory kit (see Figure 1).
3. Align the mounting brackets with the screw holes on the side of the PDM and secure with the supplied screws (see Figure 1).

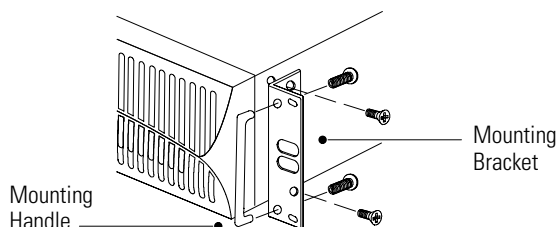


Figure 1. Installing the Mounting Brackets



NOTE The PDM must be installed above the UPS as shown in Figure 2.

4. Slide the PDM into the rack.
5. For plug-receptacle models, continue to “Low-Voltage PDM Installation” on page 18 or “High-Voltage PDM Installation” on page 19. For hardwired models, continue to “PDM Hardwired Installation” on page 23.

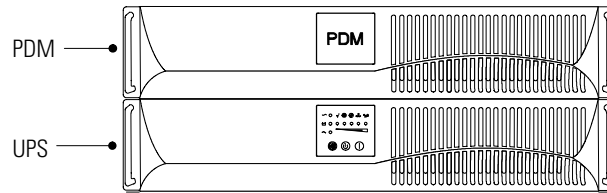


Figure 2. Rack-Mount UPS with PDM

Tower Setup

The PDM must be stabilized with pedestals and/or joining brackets. The tower setup varies depending on the total number of cabinets:

1. **For one UPS and one PDM**, the pedestals and the joining brackets must be installed. Skip to Step 2.
For three or more cabinets, skip to Step 5 to install the joining brackets.
2. Place the PDM cabinet horizontally so that the left end of the unit is accessible (see Figure 3).

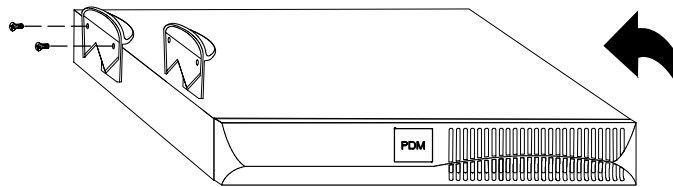


Figure 3. Installing PDM Pedestals with Two Cabinets

3. Place the UPS cabinet upside down so that the right end of the unit is accessible (see Figure 4).

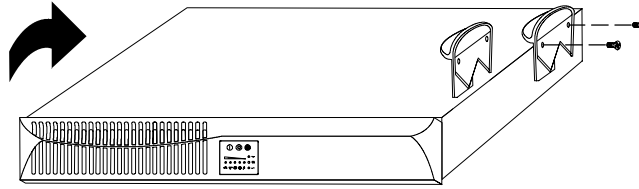


Figure 4. Installing UPS Pedestals

4. Position two of the pedestals over the edge of each cabinet so that the weight of the unit is evenly distributed. Secure the pedestals with the screws provided in the accessory kit.
5. Carefully position the cabinets upright with the air vents at the top (see Figure 5 or Figure 6).

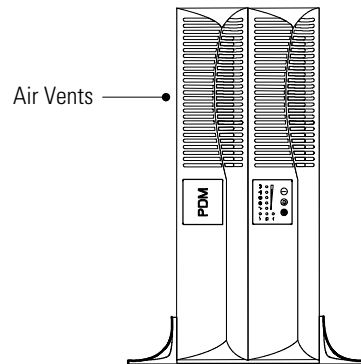


Figure 5. Pedestals with Two Cabinets



NOTE Pedestals are required for one and two cabinet installations. Joining brackets are required for all tower installations.

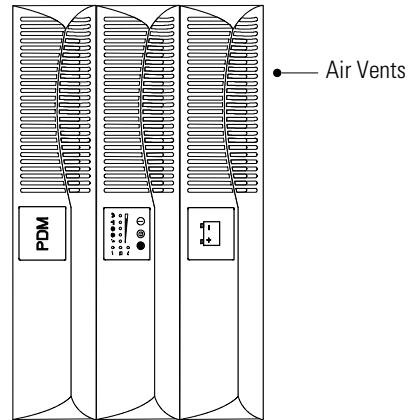


Figure 6. Tower Setup

6. Align each joining bracket with the adjacent corner screw holes and secure with the supplied screws (see Figure 7).

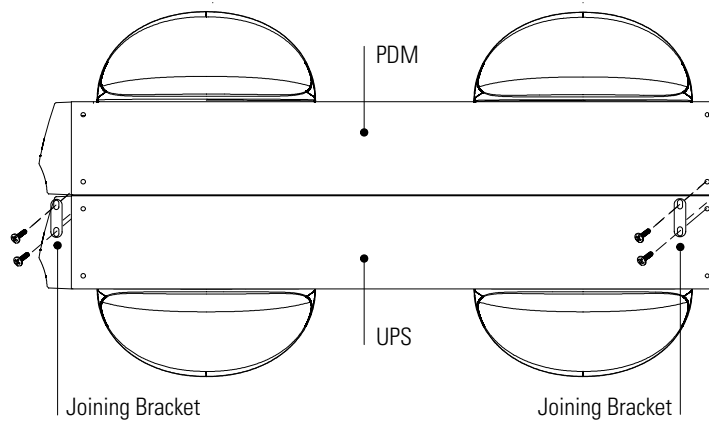


Figure 7. Installing the Joining Brackets (Top View with Pedestals)

7. For plug-receptacle models, continue to the following section, “Low-Voltage PDM Installation” or “High-Voltage PDM Installation” on page 19. For hardwired models, continue to “PDM Hardwired Installation” on page 23.

Low-Voltage PDM Installation

Use the following steps to install the PDM2-LV-US-P1 model:

1. Verify that the Bypass switch on the PDM is in the NORMAL position (see Figure 8).
2. Plug the UPS power cord into the UPS-input connector on the PDM rear panel.
3. Plug the UPS 5-30 output receptacle (attached cord) into the UPS-output connector on the PDM rear panel.

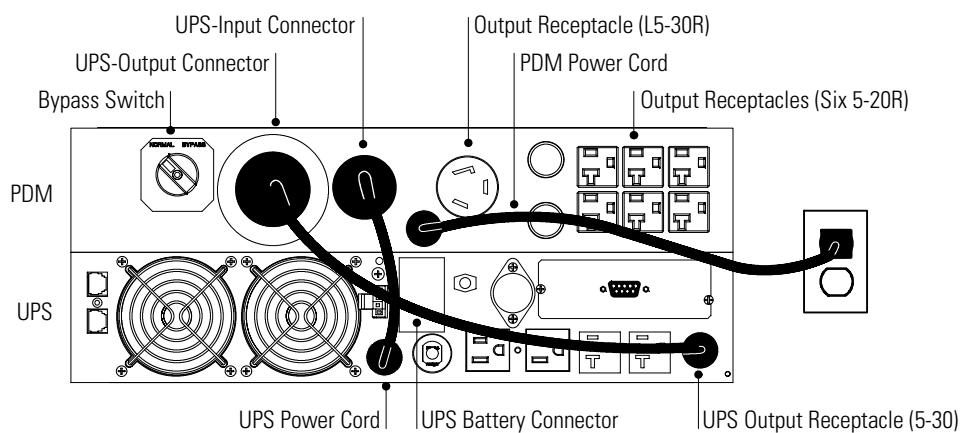


Figure 8. Typical Low-Voltage Installation

4. Plug the equipment to be protected into the PDM output receptacles. Distribute the load evenly between the rows of receptacles.
DO NOT protect laser printers with the UPS because of the exceptionally high power requirements of the heating elements.
5. Plug the PDM power cord into a power outlet. All UPS front panel indicators flash briefly and the UPS conducts a self-test.
When the self-test is complete, the ~ indicator flashes, indicating the UPS is in Standby mode.
6. Start the UPS by pressing the On | button. The ~ indicator stops flashing and the bar graph indicators display the percentage of load being applied to the UPS.
The UPS is now in Normal mode and supplying power to your equipment.

High-Voltage PDM Installation

Use the following steps to install the PDM1-HV-US-P1, PDM1-HV-US-P2, PDM1-HV-US-P3, PDM2-HV-US-P1, and PDM2-HV-EU-P2 models:

1. Verify that the Bypass switch on the PDM is in the NORMAL position (see Figure 9).
2. **For PDM1 models only**, select the input voltage (208V or 240V) using the Voltage Selector switch according to the utility voltage:
 - Utility voltage 200–208V, select 208V
 - Utility voltage 220–240V, select 240V



NOTE The output of the PDM1 models is 120V (PDM1-HV-US-P1 output is 120/240V), while the UPS and utility input are 200–240V.

3. Verify that the UPS power cord is detached from the UPS input connector. Retain for use in Step 7.
4. Connect the short jumper cable (provided in the accessory kit) from the 16A UPS output receptacle into the UPS-output connector on the PDM.

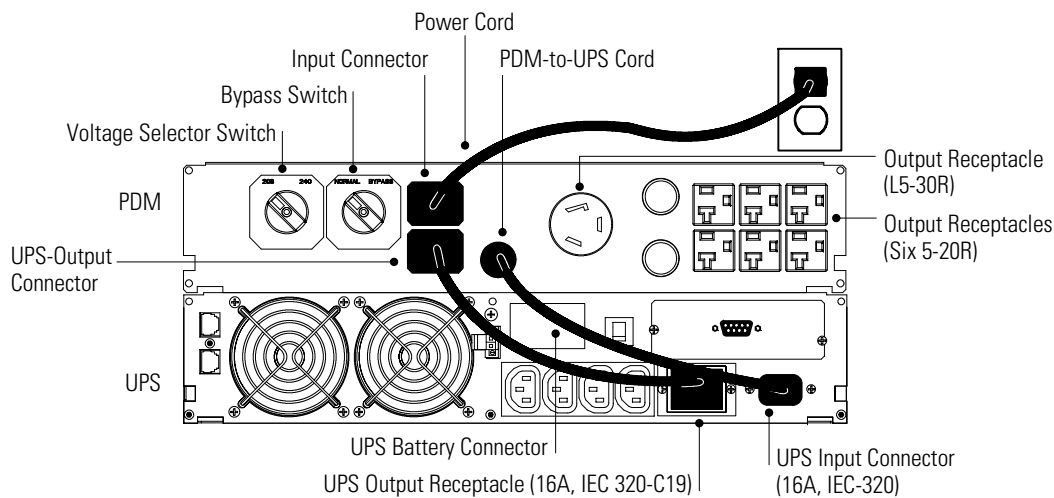


Figure 9. Typical High-Voltage Installation (PDM1-HV-US-P2 Shown)

5. Plug the attached PDM-to-UPS cord into the input connector on the UPS rear panel.
6. Plug the equipment to be protected into the PDM output receptacles. Distribute the load evenly between the rows of receptacles.
DO NOT protect laser printers with the UPS because of the exceptionally high power requirements of the heating elements.
7. Using the UPS power cord removed in Step 3, plug the cord into the PDM input connector.
8. Plug the other end of the power cord into a power outlet. All UPS front panel indicators flash briefly and the UPS conducts a self-test.
When the self-test is complete, the \sim indicator flashes, indicating the UPS is in Standby mode.
9. Start the UPS by pressing the On | button. The \sim indicator stops flashing and the bar graph indicators display the percentage of load being applied to the UPS.

The UPS is now in Normal mode and supplying power to your equipment.

Plug-Receptacle PDM Rear Panels

This section shows the rear panels of the plug-receptacle PDM models.

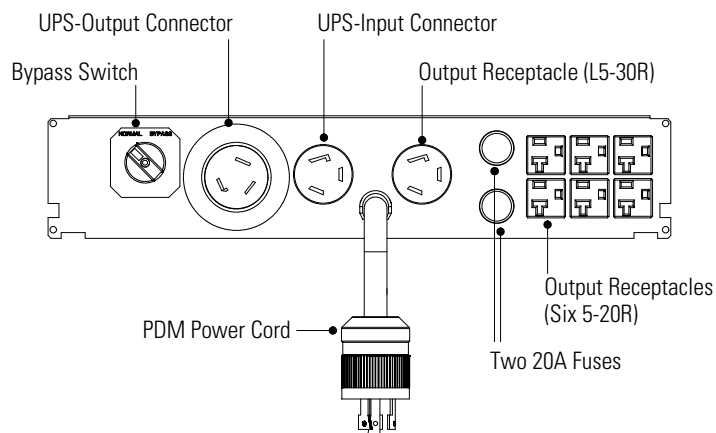


Figure 10. PDM2-LV-US-P1

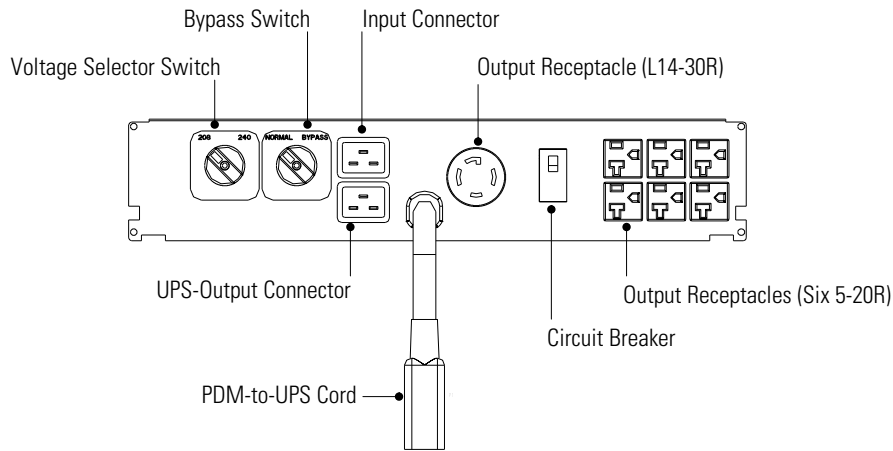


Figure 11. PDM1-HV-US-P1

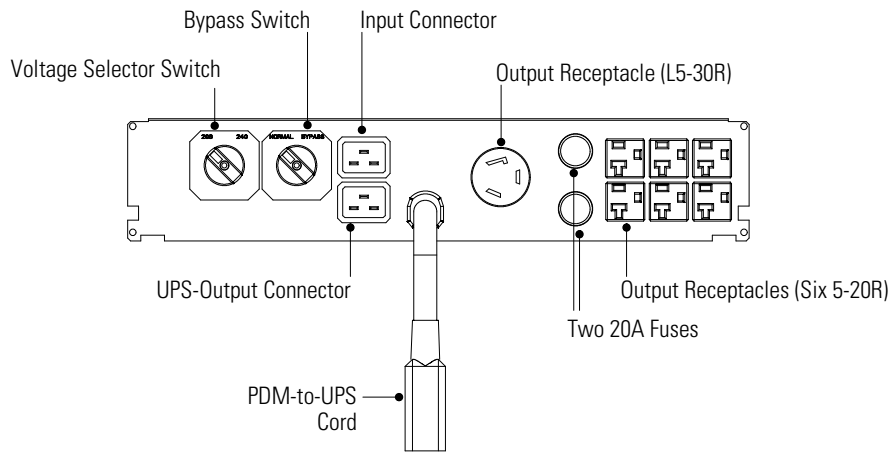


Figure 12. PDM1-HV-US-P2

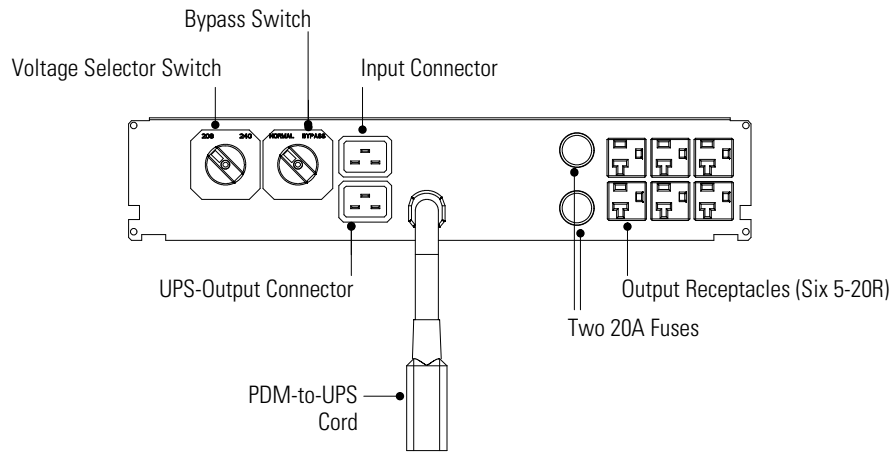


Figure 13. PDM1-HV-US-P3

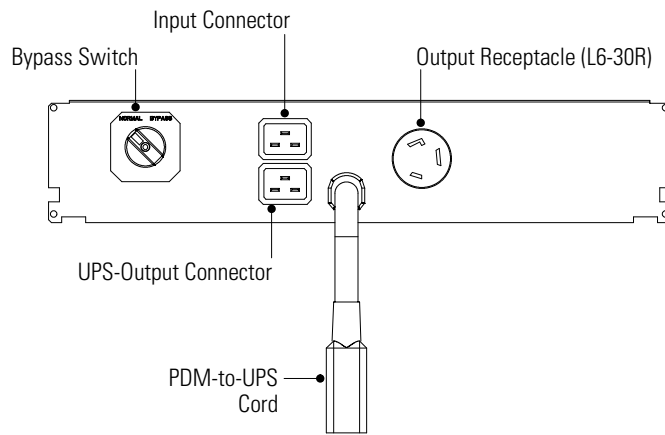


Figure 14. PDM2-HV-US-P1

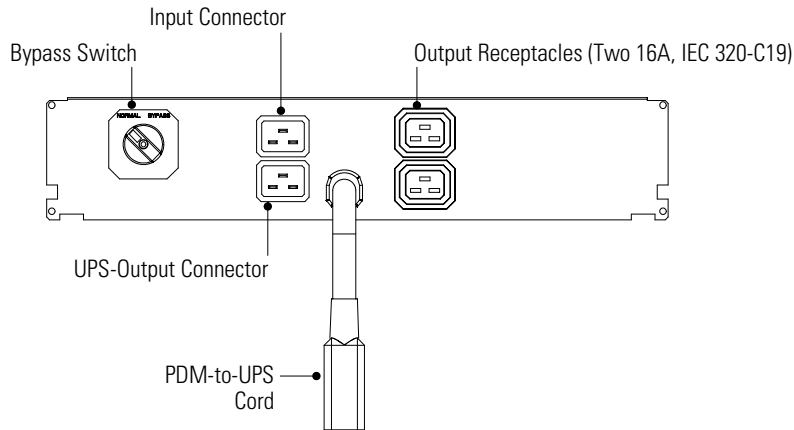


Figure 15. PDM2-HV-EU-P2

PDM Hardwired Installation

WARNING



Only qualified service personnel (such as a licensed electrician) should perform the electrical installation. Risk of electrical shock.

CAUTION



- For PDM models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For PDM models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

The PDM requires a dedicated branch circuit that meets the following requirements:

- **High-voltage models:** 20A circuit with short circuit and overcurrent protection; 200–240 Vac
- **Low-voltage models:** 30A circuit with short circuit and overcurrent protection; 120 Vac
- Single-phase
- 50/60 Hz
- Flexible metal conduit is recommended for ease of service and maintenance

To hardwire the PDM1-HV-US-HW, PDM2-HV-US-HW, and PDM2-LV-US-HW models:

1. Switch off utility power at the distribution point where the PDM will be connected. Be absolutely sure there is no power.
2. Verify that the Bypass switch on the PDM is in the NORMAL position (see Figure 16 or Figure 17).
3. **PDM1-HV-US-HW and PDM2-HV-US-HW:** Connect the short jumper cable (provided in the accessory kit) from the 16A UPS output receptacle into the UPS-output connector on the PDM. See Figure 16.

Plug the attached PDM-to-UPS cord into the input connector on the UPS rear panel.

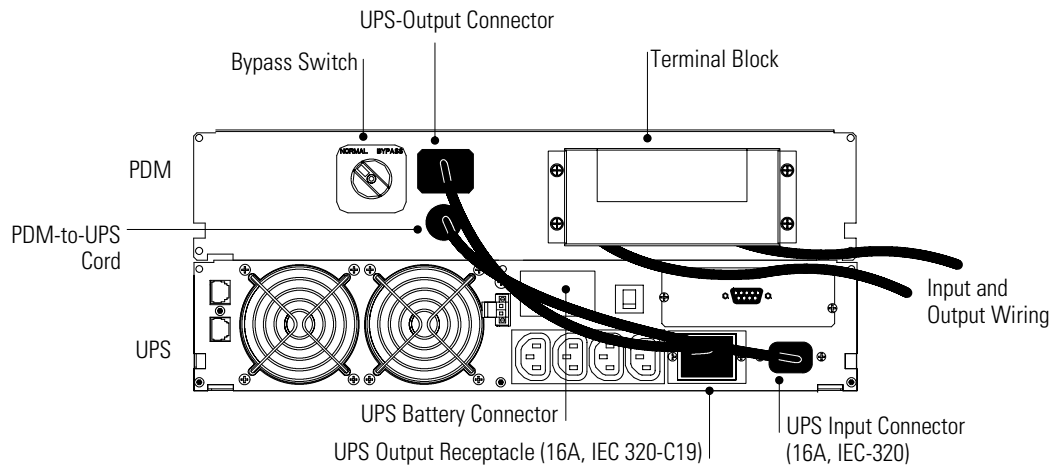


Figure 16. Typical High-Voltage Hardwired Installation (PDM2-HV-US-HW Shown)

4. **PDM2-LV-US-HW:** Plug the UPS power cord into the UPS-input connector on the PDM rear panel.

Plug the UPS 5-30 output receptacle (attached cord) into the UPS-output connector on the PDM rear panel.

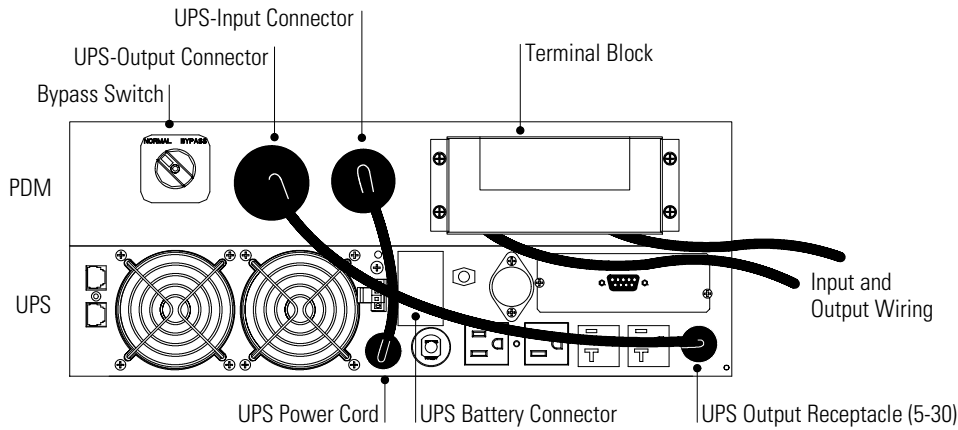


Figure 17. Typical Low-Voltage Hardwired Installation

5. Remove the angle bracket from the terminal block cover (see Figure 18).
6. Remove the wiring knockouts as needed for your wiring configuration. Knockouts are available on the ends and bottom of the terminal block cover.

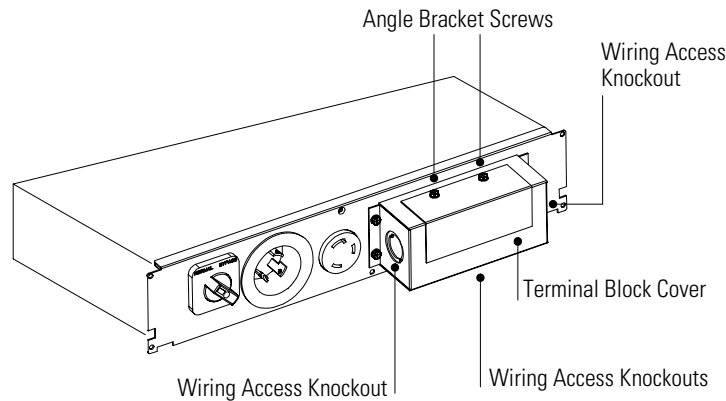


Figure 18. Wiring Access (PDM2-LV-US-HW Shown)

7. Pull the wires through the conduit, leaving approximately 2 ft (0.5m) of exposed wire. Attach a flexible metal fitting to the end of the conduit.
8. Insert the conduit through the wiring access entry and attach the conduit fitting to the panel. Strip 0.5" (1.5 cm) of insulation from the end of each incoming wire.
9. Connect the input and ground wires to the terminal block according to Figure 19 and Table 1.
10. Connect the output and ground wires to the terminal block according to Figure 19 and Table 1.

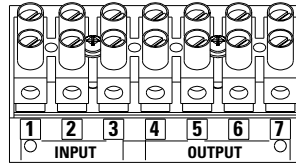


Figure 19. Terminal Block

Table 1. PDM Wiring Specifications

UPS Model	Wire Function	Terminal Position	Terminal Wire Size Rating*	Tightening Torque
PDM1-HV-US-HW	Input	L1	2.0–13.3 mm ² (14–6 AWG)	16 in lb (2.0 Nm)
		L2		
		Ground		
	Output	L1	2.0–13.3 mm ² (14–6 AWG)	16 in lb (2.0 Nm)
		L2		
		Neutral		
		Ground		
PDM2-HV-US-HW	Input	L1	2.0–13.3 mm ² (14–6 AWG)	16 in lb (2.0 Nm)
		L2		
		Ground		
	Output	L1	2.0–13.3 mm ² (14–6 AWG)	16 in lb (2.0 Nm)
		L2		
		Ground		
PDM2-LV-US-HW	Input	L1	2.0–13.3 mm ² (14–6 AWG)	16 in lb (2.0 Nm)
		Neutral		
		Ground		
	Output	L1	2.0–13.3 mm ² (14–6 AWG)	16 in lb (2.0 Nm)
		Neutral		
		Ground		

*Use 2.0 mm² (14 AWG) 75°C copper wire minimum.

11. **For the PDM1-HV-US-HW model**, select the input voltage (208V or 240V) using the Voltage Selector switch according to the utility voltage:
 - Utility voltage 200–208V, select 208V
 - Utility voltage 220–240V, select 240V
12. Switch the main utility breaker on. All UPS front panel indicators flash briefly and the UPS conducts a self-test.
When the self-test is complete, the \sim indicator flashes, indicating the UPS is in Standby mode.
13. Start the UPS by pressing the On | button. The \sim indicator stops flashing and the bar graph indicators display the percentage of load being applied to the UPS.
The UPS is now in Normal mode and supplying power to your equipment.

Hardwired PDM Rear Panels

This section shows the rear panels of the hardwired PDM models.

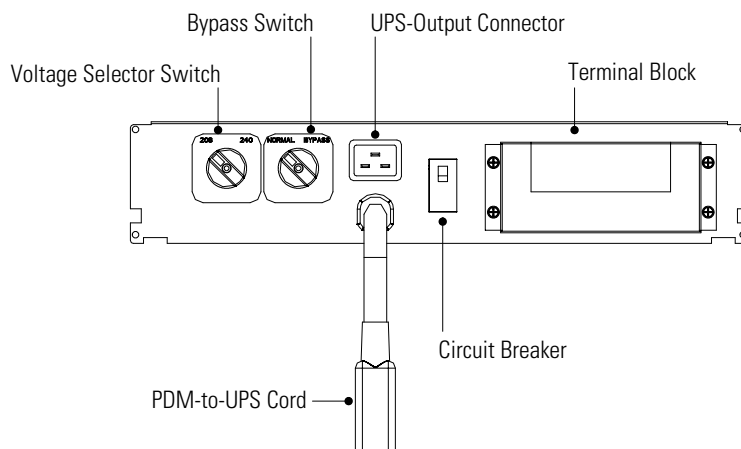


Figure 20. PDM1-HV-US-HW

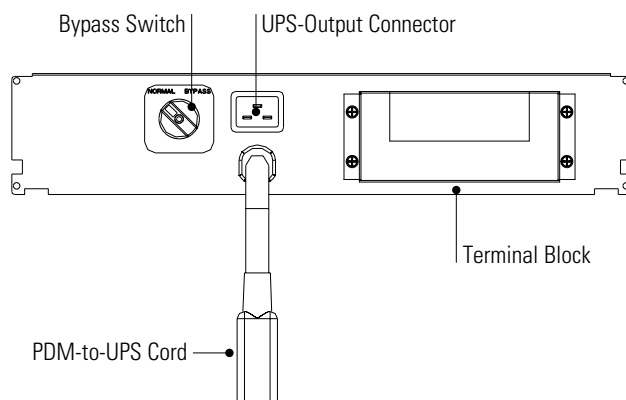


Figure 21. PDM2-HV-US-HW

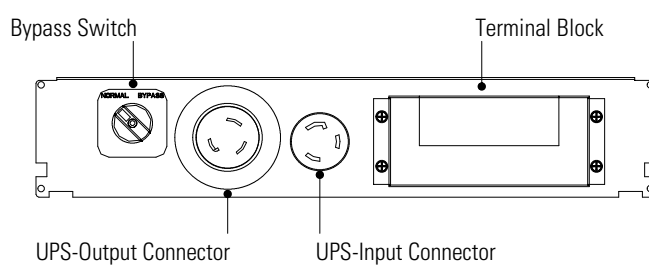


Figure 22. PDM2-LV-US-HW

Load Segments

The PDM plugs into Load Segment 2 on the UPS rear panel. See the UPS user's guide for more information on load segments.



NOTE When the PDM is in Bypass mode, all load segments are switched to utility power and cannot be controlled until the PDM Bypass switch is returned to the NORMAL position.




CHAPTER 3

OPERATION

The PowerPass Distribution Module allows for the removal of the UPS while providing power to your protected equipment. This Maintenance Bypass feature is useful when replacing the UPS for maintenance or upgrades.

Using Maintenance Bypass

Use the following procedure to transfer your equipment to Maintenance Bypass (AC Line operation) and remove the UPS:

1. Turn the Bypass switch on the PDM to the BYPASS position. The PDM is now powering your equipment from utility power.
2. Press and hold the Off  button for approximately three seconds. The UPS switches to Standby mode.
3. If an optional Extended Battery Module is installed, unplug the EBM cable from the battery connector on the UPS rear panel.
4. **For low-voltage models**, disconnect the cord from the UPS-output connector on the PDM rear panel. See Figure 8 on page 18.
Disconnect the UPS power cord from the UPS-input connector on the PDM rear panel.
5. **For high-voltage models**, disconnect the jumper cable from the 16A output receptacle on the UPS rear panel. See Figure 9 on page 19.
Disconnect the PDM-to-UPS cord from the input connector on the UPS rear panel.
6. Remove the UPS.

Use the following procedure to reinstall the UPS and transfer your equipment from Maintenance Bypass (AC Line operation) to the UPS:

1. If an optional EBM is installed, reconnect the EBM cable to the battery connector on the UPS rear panel.
2. **For low-voltage models**, plug the UPS 5-30 output receptacle (attached cord) into the UPS-output connector on the PDM rear panel.
 Plug the UPS power cord into the UPS-input connector on the PDM rear panel.
 All UPS front panel indicators flash briefly and the UPS conducts a self-test. When the self-test is complete, the ~ indicator flashes, indicating the UPS is in Standby mode.
3. **For high-voltage models**, plug the jumper cable from the UPS-output connector on the PDM into the 16A UPS output receptacle.
 Plug the attached PDM-to-UPS cord into the input connector on the UPS rear panel.
 All UPS front panel indicators flash briefly and the UPS conducts a self-test. When the self-test is complete, the ~ indicator flashes, indicating the UPS is in Standby mode.
4. Start the UPS by pressing the On | button.
 The ~ indicator stops flashing.
5. Turn the Bypass switch on the PDM to the NORMAL position.
 The bar graph indicators display the percentage of load being applied to the UPS. The UPS is now in Normal mode and supplying power to your equipment.



CHAPTER 4

SPECIFICATIONS

Table 2. Mechanical

PowerPass Distribution Module Models	PDM Model	For use with PW9125 UPS Models
	PDM1-HV-US-P1	2500EU and 3000EU
	PDM1-HV-US-P2	2500EU and 3000EU
	PDM1-HV-US-P3	2500EU and 3000EU
	PDM1-HV-US-HW	2500EU and 3000EU
	PDM2-HV-US-P1	2500EU and 3000EU
	PDM2-HV-EU-P2	2500E and 3000E
	PDM2-HV-US-HW	2500EU and 3000EU
	PDM2-LV-US-P1	2500U and 3000U
	PDM2-LV-US-HW	2500U and 3000U
Dimensions (WxDxH)	17.0" x 23.9" x 3.5" (2U) (43.2 x 60.7 x 8.9 cm)	
Weight	PDM1 Models: 76 lb (34.5 kg) PDM2 Models: 20 lb (9 kg)	

Table 3. Power Connections

Model	Input Connection to PDM	Output Receptacles
PDM1-HV-US-P1	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(6) 5-20R, (1) L14-30R
PDM1-HV-US-P2	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(6) 5-20R, (1) L5-30R
PDM1-HV-US-P3	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(6) 5-20R
PDM1-HV-US-HW	30A Terminal block (3 terminals)	30A Terminal block (4 terminals)
PDM2-HV-US-P1	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(1) L6-30R
PDM2-HV-EU-P2	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(2) 16A, IEC 320-C19
PDM2-HV-US-HW	30A Terminal block (3 terminals)	30A Terminal block (3 terminals)
PDM2-LV-US-P1	6-ft, L5-30P attached power cord	(6) 5-20R, (1) L5-30R
PDM2-LV-US-HW	30A Terminal block (3 terminals)	30A Terminal block (3 terminals)

Table 4. Technical

	PDM1 Models	PDM2 Models
Overcurrent Protection	Two 20A fuses PDM1-HV-US-P1 and PDM1-HV-US-HW: 15A circuit breaker	PDM2-LV-US-P1: Two 20A fuses
Isolation Transformer	3 kVA (208–240): 120/240V	None
Bypass Switch	30A, 600V	
Operating Temperature	0°C to 40°C (32°F to 104°F)	
Storage Temperature	-22°C to 55°C (-7°F to 131°F)	
Relative Humidity	5–95% noncondensing	
Safety Conformance	UL 1778; CAN/CSA C22.2, No. 107.1, 107.2; NOM-019-SCFI	UL 1778 CAN/CSA C22.2, No. 107.1, 107.2 PDM2-HV-EU-P2: EN 50091-1-1, IEC 950
Agency Markings	UL, cUL PDM2-HV-EU-P2: NEMKO only	
EMC (Class A)	FCC Part 15, ICES-003	EN 50091-2, FCC Part 15, ICES-003